



# PHYSICS AND ASTRONOMY SEMINAR

## Dr. Shinji Mukohyama

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### “Horava-Lifshitz cosmology revisited”

#### Abstract

Horava-Lifshitz gravity was recently proved to be renormalizable and thus is considered as a good candidate for quantum gravity. In this talk I will revisit cosmological implications of the theory. In particular, I will argue that (i) the anisotropic scaling with the dynamical critical exponent  $z=3$ , which renders the theory renormalizable, provides a solution to the cosmological horizon problem and leads to scale-invariant cosmological perturbations even without inflation and that (ii) the same scaling can solve the cosmological flatness problem if the initial condition of the Universe is set by a small instanton. I will also discuss how (iii) the issue of strong coupling of the scalar graviton can be solved via an analogue of the Vainshtein screening.

Friday, August 24, 2018

11:00 a.m.

ECS – Room 124